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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/789,240

02/26/2004

Fabio Pasolini

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04/30/2007

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EXAMINER

BUKOWCZYK, JEREMY

ART UNIT

PAPER NUMBER

3609

MAIL DATE

DELIVERY MODE

04/30/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/789,240

Applicant(s)

PASOLINI ET AL.

Examiner

Jeremy Bukowczyk

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☒ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Italy on 02/28/2003. It is noted, however, that applicant has not filed a certified copy of the Italian application as required by 35 U.S.C. 119(b).

Claim Objections

2. Claim 19 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 19 is similar to claim 10 and does not further limit the subject matter.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 8, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Hartmann et al. (4,823,626).

As per claims 1 and 20, Hartmann discloses a first inertial sensor having a first preferential detection axis (col. 3, lines 43-47); a converter coupled to said first inertial sensor and supplying a first signal correlated to forces acting on said first inertial sensor according to said first preferential detection axis (col. 3, liens 32-36); a first processing

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stage structured to process said first signal and supply a second signal correlated to a dynamic component of said first signal (col. 3, lines 59-64). Hartmann further inherently discloses a first threshold comparator supplying a pulse when said second signal exceeds a pre-determined threshold by describing a signal generated by movement. The threshold claimed by the applicant is equivalent to a position at rest relative to the housing disclosed by Hartmann where a signal is generated by movement (col. 1, lines 23-43).

As per claim 8, Hartmann further discloses a second inertial sensor having a second preferential detection axis that is transverse to the first preferential detection axis (col. 1, lines 44-57).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 11-13, 17, 21, and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartmann et al. (4,823,626) in view of Ishiyama et al. (US 6,738,214 B2).

As per claims 11, 12, 17, and 23, Hartmann teaches all the elements of claims 1 and 20, and further discloses a supply source (24) and a plurality of user devices alternatively connected to said supply source in a first operative state, and disconnected from said supply source in a second operative state (col. 5, lines 1-5). Hartmann fails to

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explicitly disclose a deactivation means and activation means that in the presence of the activation pulse activates from a stand-by condition.

Ishiyama in the same field of invention discloses a deactivation means (col. 7, lines 31-36) and inherently discloses an activation means that is necessitated to start the device again in the presence of the activation pulse after being deactivated (col. 3, lines 39-45).

From this teaching of Ishiyama, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify and inertial sensor arrangement of Hartmann to include a deactivation means and activation means that in the presence of the activation pulse activates from a stand-by condition as taught by Ishiyama, in order to minimize the energy consumption of a device or to protect the internal components of a device from sudden jarring movements.

As per claims 2, 13, and 21, Hartmann teaches all the elements of claims 1 and 11, and further teaches a processing stage comprising a filter (col. 5, lines 9-13). Hartmann fails to teach a subtractor element.

Ishiyama in the same field of invention discloses both high-pass and low-pass filters. Ishiyama utilizes the high-pass filter to extract the dynamic acceleration (falling), while the low-pass filter is used to extract the static acceleration components (gravity) (col. 5, lines 5-31). The output of a high-pass filter is equivalent to subtracting the output of a low-pass filter from the original signal.

From this teaching of Ishiyama, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify an inertial sensor

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arrangement of Hartmann to include a subtractor element of Ishiyama, for the purpose of providing the dynamic and static acceleration components of the force sensor output signal.

7. Claims 3 and 14-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartmann et al. (4,823,626) in view of Ishiyama et al. (US 6,738,214 B2) as applied to claims 1 and 11 above, and further in view of Oguchi et al (US 2002/0033047 A1).

The Hartmann and Ishiyama combination discloses the structural elements of the claimed invention as applied to claims 1 and 11. Hartmann further teaches a first preferential detection axis, a second preferential detection axis, and a third preferential detection axis being orthogonal to one another (col. 1, lines 44-57). Hartmann further teaches a first inertial sensor and second inertial sensor that are selectively connectable in sequence to a converter (col. 5, lines 20-27). The combination fails to disclose a micro-electro-mechanical sensor with capacitive unbalancing.

Oguchi in the same field of invention discloses a micro-electro-mechanical sensor with capacitive unbalancing (Fig. 2, paragraphs 41 and 42).

From this teaching of Oguchi, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify an inertial sensor arrangement of Hartmann in view of Ishiyama to include a micro-electro-mechanical sensor with capacitive unbalancing as taught by Oguchi, in order to use a force sensor with a moveable portion that naturally returns to its original position and can continually operate without constant recalibration.

8. Claims 4-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartmann et al. (4,823,626) in view of Oguchi et al (US 2002/0033047 A1).

Hartmann teaches all the elements of claims 1, and further teaches a first preferential detection axis, a second preferential detection axis, and a third preferential detection axis being orthogonal to one another (col. 1, lines 44-57). Hartmann further teaches a first inertial sensor and second inertial sensor that are selectively connectable in sequence to a converter (col. 5, lines 20-27). Hartmann further discloses a switch device to selectively connect a first, second, and third inertial sensor in sequence to a converter (Fig. 1). Hartmann fails to disclose a micro-electro-mechanical sensor with capacitive unbalancing.

Oguchi in the same field of invention discloses a micro-electro-mechanical sensor with capacitive unbalancing (Fig. 2, paragraphs 41 and 42).

From this teaching of Oguchi, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify an inertial sensor arrangement of Hartmann to include a micro-electro-mechanical sensor with capacitive unbalancing as taught by Oguchi, in order to use a force sensor with a moveable portion that naturally returns to its original position and can continually operate without constant recalibration.

9. Claims 9, 10, 19, and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hartmann et al. (4,823,626) in view of Jeenicke et al. (5,788,273).

Hartmann teaches all the elements of claims 1 and 20, and further discloses a phase generator structured to provide timing signals (col. 5, lines 20-29). Hartmann fails to disclose a second processing stage structured to process a third signal and

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supply a fourth signal correlated to a dynamic component of said third signal and a second threshold comparator supplying a pulse when said fourth signal exceeds the pre-determined threshold.

Jeenicke in the same field of invention discloses a second processing stage structured to process a third signal and supply a fourth signal correlated to a dynamic component of said third signal and a second threshold comparator supplying a pulse when said fourth signal exceeds the pre-determined threshold (col. 2, lines 15-47).

From this teaching of Jeenicke, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify an inertial sensor arrangement of Hartmann to include a second processing stage structured to process a third signal and supply a fourth signal correlated to a dynamic component of said third signal and a second threshold comparator supplying a pulse when said fourth signal exceeds the pre-determined threshold as taught by Jeenicke, in order to provide an impetus for the activation and deactivation means.

10. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hartmann et al. (4,823,626) in view of Ishiyama et al. (US 6,738,214 B2) as applied to claim 11 above, and further in view of Jeenicke et al. (5,788,273).

The Hartmann and Ishiyama combination discloses the structural elements of the claimed invention as applied to claim 11. Hartmann further discloses a phase generator structured to provide timing signals (col. 5, lines 20-29). The combination fails to disclose a second processing stage structured to process a third signal and supply a fourth signal correlated to a dynamic component of said third signal and a second

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threshold comparator supplying a pulse when said fourth signal exceeds the pre-determined threshold.

Jeenicke in the same field of invention discloses a second processing stage structured to process a third signal and supply a fourth signal correlated to a dynamic component of said third signal and a second threshold comparator supplying a pulse when said fourth signal exceeds the pre-determined threshold (col. 2, lines 15-47).

From this teaching of Jeenicke, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify an inertial sensor arrangement of Hartmann in view of Ishiyama to include a second processing stage structured to process a third signal and supply a fourth signal correlated to a dynamic component of said third signal and a second threshold comparator supplying a pulse when said fourth signal exceeds the pre-determined threshold as taught by Jeenicke, in order to provide an impetus for the activation and deactivation means.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Volpe discloses a deactivation means and activation means. Ohnishi discloses a micro-electromechanical acceleration sensor that is compared against multiple threshold levels. Okeya discloses a portable acceleration sensor that detects when the device is being handled by a user and activates from a standby state. Zerbini discloses an acceleration sensor in a cell phone.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jeremy Bukowczyk whose telephone number is 571-270-3022. The examiner can normally be reached on Mon-Thu 6:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynda Jasmin can be reached on 571-270-3033. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

jb

A handwritten signature in black ink, appearing to read 'Benny Tieu', with a stylized, cursive script.

BENNY TIEU
PRIMARY EXAMINER